IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:

KOERNLE et al.

Serial No. 09/987,742 Art Unit: 2829

Filed: November 15, 2001 Examiner: J. Hollington

For: **CIRCUIT CONFIGURATION FOR THE VOLTAGE SUPPLY OF A TWO-WIRE SENSOR**

INFORMATION DISCLOSURE STATEMENT

Commissioner of Patents
Washington, D.C. 20231

Sir:

An Information Disclosure Statement is submitted herewith pursuant to 37 C.F.R. §1.97-1.98. Please note the following particulars:

[**NOTE**: One only of items a, b, c, and d must be checked.]

[ ] a. The enclosed statement is being filed within three months of the filing date of a national application, or within three months of the date of entry into the national stage as set forth in 37 C.F.R. §1.491 in an international application, or before the mailing date of a first Office Action on the merits, whichever event occurs last.

[X] b. The enclosed statement is being filed after a first action on the merits but before the mailing date of a final action under 37 C.F.R. §1.113, or a notice of allowance under 37 C.F.R. §1.311.

The enclosed statement is accompanied by [check one]:
[ ] i. a certification in part (e) below as specified in 37 C.F.R. §1.97(e), or
[x] ii. a check in the amount of $180.00 required by 37 C.F.R. §1.17(p).

[ ] c. The enclosed statement is being filed after the mailing date of a final action under 37 C.F.R. §1.113, or a notice of allowance under 37 C.F.R. §1.311, but before payment of the issue fee.

PETITION: It is requested that the information being submitted be considered. [NOTE: If box (c) is checked, the following two boxes must be checked.]

[ ] PETITION FEE: A check for $130.00 required by 37 CFR §1.17(i)(1), is enclosed.
[ ] CERTIFICATION is attended to in box (e) below.

[ ] d. The enclosed statement is being filed pursuant to 37 C.F.R. §1.97(i), for placement in the file.

[ ] e. Certification [Check one] [Certification is required only if box (b)(i) or box (c) is checked.]

[ ] I hereby certify that each item of information contained in the enclosed Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement,

or

[ ] I hereby certify that no item of information in the enclosed Information Disclosure Statement herewith was cited in a communication from a foreign patent office in a counterpart foreign application, or, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. §1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

or

[ ] Appropriate certification is attached.

[X] f. If no check is enclosed and a fee is due in connection with this communication or if the check enclosed is insufficient, the Commissioner is authorized to charge any fee or additional fee due in connection with this communication to Deposit Account No. 14-0112. A duplicate of this sheet is enclosed.

[X] g. Copies of the documents are attached herewith with a completed Form PTO-1449.

[X] h. Enclosed is a concise explanation of the relevance, as it is presently understood by the individual designated in section 1.56(c) most knowledgeable about the content of the information, of each patent and publication listed that is not in the English language.

The Examiner is respectfully requested to cite the documents listed on the attached Form PTO-1449 in the next Office Action. In so doing, the Examiner is respectfully requested to initial in the space adjacent to the listing of each document on the Form PTO-

1449, and return a copy of the initialed Form PTO-1449 with the next communication to Applicants, to confirm that these documents have been considered by the Examiner and made of record in this application.

If the Examiner has any questions or wishes to discuss this application, kindly telephone the undersigned at the below-listed number.

Respectfully submitted,

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Date: August 1, 2003

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DE 196 22 973

The part of the circuit to be placed under protection is the resistance-collector voltage divider and the FET in the guise of a series regulator. By the high amplification of the NPN transistor, the voltage change when the load changes is very small, By the high resistance used in the circuit, its own current requirement is very low

DE 39 04 363

The linear voltage control circuit has an adjusting member (3) coupled to the input and output, a control amplifier (2), an output voltage fed reference voltage source (1), and an input voltagea fed start circuit (4), generating an adjusting control signal.

A divider splits the start current to the start circuit from the input into a first, limited partial current for the start circuit, and into a second partial current, contg. the start current component. The second partial current, bypassing the adjustment member, flows to the output.

Advantage - Reduced own power consumption

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The signal generator in each communications interface circuit reduces the d.c. supply voltage on the two-wire line in accordance with pulse modulation representing the communications signal.

The signal receiver at each communications interface circuit responds to the changes in voltage on the two-wire line. The change changes to the voltage are made in pulses. Each signal generator ha has a shunt path bridging the line.

USE/**Advantage** - Any number of subscribers connected to the two-wire line can exchange communications signals without interfering with the measurements being sent at the same time via the same wires. /3

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The device includes a sensor and a processing circuit connected to a load using two wires. Two switches (11,12) are arranged in series in a switching circuit (21), the ends of which (C,D) are connected to the detector terminals. The middle point (S) is connected to a terminal (F) of the processing circuit.

When operating, one switch is conductive and the other switch determines a parallel regulation of the voltage (V) at the processing circuit terminals. When in the rest position, the switch (I1) determines a series regulation of the voltage and switch (I2) is blocked.

Advantage - Detector does not require regulated voltage source

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Novelty - The arrangement has connections for intrinsically safe circuits connected to bus via a current limiter and protected connection for non-intrinsically safe circuits is connected to bus via a voltage limiter.

Detailed Description - The field bus arrangement has a field bus coupler (22) in a non-explosive region (2) with three mutually voltage-isolated circuits. The coupler is connected to a main field bus line (23) laid in the non-explosive area via a first circuit. The voltage source (21) is connected to the coupler via the second circuit and the third circuit (24) is fed into the explosive area as a non-intrinsically safe circuit. The field bus distributor (11) has a capsule enclosing all voltage-carrying components, connections (1111-111n) for intrinsically safe circuits for connecting field equipment, a protected connection (1121) for the non-intrinsically safe circuit, current limiters, voltage limiters and a bus. Each connection for intrinsically safe circuits is connected to the bus via a current limiter. The protected connection is connected to the bus via the voltage limiter.

Use - For use in areas subject to the danger of explosion for communication between field equipment.

Advantage - Provides a number of connectors for intrinsically safe circuits for power supply and data communications for bus-compatible field equipment, whereby the field bus distributor can be expanded with an earthless safety battery.

FORM PTO-1449

INFORMATION DISCLOSURE CITATION

Atty Docket 24810	Serial No. 09/987,742
Applicant Koernle	
Filing Date Nov. 15, 2001	Group Art Unit 2829

U.S. PATENT DOCUMENTS

Examiner Initial		Document Number	Issue Date	Name	Class	Sub-Class	Filing Date
	AA						
	AB						
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						

FOREIGN PATENT DOCUMENTS

		Document Number	Date	Country	Class	Sub-Class	Trans-lation
	AL	196 22 973	May 20, 1998	DE			No
	AM	39 04 363	Aug 16, 1990	DE			No
	AN	36 15 463	Nov 12, 1987	DE			No
	AO	691 29 189	Apr 30, 1992	DE			No
	AP	199 10 409	Nov 18, 1999	DE			No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR		

Examiner	Date Considered

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.